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Adoption, Adaptation and Integration: Renegotiating the Identity of Educational Research through Interdisciplinarity

Tim Jay^{a*}, Jo Rose^b and Lizzi Milligan^c

^aSheffield Institute of Education, Sheffield Hallam University, Sheffield, UK

^bGraduate School of Education, University of Bristol, Bristol, UK

^cDepartment of Education, University of Bath, Bath, UK

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Introduction

With increasing calls for large-scale research projects that cross boundaries of disciplines, institutions, and countries, there has never been a more appropriate time to problematize collaborative research practices, both within education and between education and other disciplines. This special issue draws together examples and discussion of interdisciplinary research in education to consider the complexities of working across and beyond disciplinary boundaries. Despite such complexities, we propose that there is potential for education to take a clear position within research partnerships that cross disciplinary boundaries: a position that takes account of the unique characteristics of our field and that goes beyond merely providing a context for other disciplines to test out their concepts. Considering this potential helps us to consider the identity of educational research as a discipline, and of educational researchers as individuals.

This special issue has brought together papers that seek to understand how and why interdisciplinary research can

‘not only draw upon two or more disciplinary perspectives in order to better understand or address a certain issue or problem—mere multidisciplinary—but

also attempt to integrate insights from these perspectives in a way that may lead to the emergence of transcendent perspectives' (McMurtry 2011, 20).

Beyond such integration of insights, papers in this issue also discuss the development and refinement of novel theory and methodology to address complex questions. We begin with papers reflecting on the practice of interdisciplinary research (Timmis and Williams 2017; Clark et al. 2017; Wishart 2017), then move on to papers that use theory to develop representations of this practice (Knewstubb and Nicholas 2017; CohenMiller et al. 2017), and then complete the issue with papers that provide theoretical representations or perspectives on interdisciplinary research (Boeren 2017; Taylor 2017).

The Nature of Education as a Discipline

Reflecting on the nature of interdisciplinary research inevitably leads us to question how we define education as a discipline. Any definition of an academic 'discipline' inevitably refers to the field or to the foci of research and methods used to understand that field: what you study, how you study it, and what counts as knowledge - and this requires some construction of boundaries. The multiplicity of foci and methods that fall under the broad remit of 'education', however, are so varied that drawing a boundary around them to make a distinct and coherent field or discipline can become problematic. Knewstubb and Nicholas (2017) highlight that education is only loosely a "discipline": people based within the field of education often bring theoretical perspectives from their own backgrounds to its study. Within higher education, people also study the practice of education within their own disciplines (Knewstubb and Nicholas 2017; Timmis and Williams 2017; Wishart 2017), bringing their own disciplinary perspectives to their research. This can lead to particular assumptions

about what education as a discipline is about and the paradigms in which educational research should operate (Wishart 2017).

Education research as a field will inevitably work across disciplines: researchers within education come from a variety of backgrounds, including psychology, sociology, international studies, geography, teaching, and specific school curriculum subjects, to name just a few. This may result in people from different backgrounds working together (Clark et al. 2017; CohenMiller et al. 2017; Timmis and Williams 2017; Wishart 2017), or may result in individual researchers bringing together ideas from different disciplines (Boeren 2017; Knewstubb and Nicholas 2017; Taylor 2017). This breadth of field is illustrated in terms of the aims and desired outcomes of education, which are many and varied: for example, education can be seen as preparation for work, as social development, as self actualisation, as support for effective functioning in the world, and as an enjoyable endeavour in itself. There are, therefore, many different types of research questions explored by educational researchers that relate to broad areas of human functioning, interaction, and context. Such ‘big questions’ (in this issue, for example CohenMiller et al. [2017] discuss a project that addresses wellbeing) are of interest to researchers and practitioners from a wide range of disciplinary backgrounds, and can be explored using a wide range of methods. Much collaborative research that takes place within education can be seen as working across disciplinary boundaries, given the backgrounds and methods used by researchers. The big questions in the field, however, also highlight the potential for collaboration between education and other disciplines. This is reflected in the current UK Research Council drive towards interdisciplinary research funding, and the Grand Challenges Research Fund which positions development funding as inter-disciplinary and challenge-driven.

The term “interdisciplinarity” is discussed in depth in the majority of papers in this issue. Authors in this issue deal with the concept of interdisciplinary in a range of ways. Both Wishart (2017) and Timmis and Williams (2017) discuss the collaborative processes in projects exploring educational processes in health-related sciences. Wishart (2017) uses the notion of interdisciplinary research as bricolage, to discuss how the thinking of a researcher from anatomy evolved as a result of discussing alternative ways of thinking about educational research, and Timmis and Williams (2017, **PAGE NUMBER**) discuss how inhabiting ‘interdisciplinary in-between spaces’ allowed researchers from both disciplines incorporate alternate perspectives into their thinking. Clark et al. (2017) use a diverse range of interdisciplinary projects where educational researchers partner with: speech and language therapists; architects and sociologists; plus researchers from medical education, sociology, music, cultural and heritage studies, and social computing, to reflect on the ways in which experiences with researchers and practitioners from other disciplines create opportunities for transformation of research-oriented thinking. In CohenMiller et al. (2017) we see an example of researchers from anthropology, sociology, education, and psychology tangling with how to research wellbeing across cultures and languages. Knewstubb and Nicholas (2017) draw from psychology and linguistics to propose a methodology for researching teaching and learning together, and Boeren (2017) synthesises the potential contributions to understanding lifelong learning from psychology, sociology, workplace learning, and political perspectives. Taylor (2017), meanwhile, uses a discussion of post-qualitative methods across disciplines to rethink that nature of the methodological boundaries within the discipline of education.

Looking across all of the articles in this issue, we argue that interdisciplinary research activity and thinking can be thought of as a kind of boundary object (Fox, 2011) and thus a locus of learning (Akkerman and Bakker, 2011). Taken together, the papers in this issue demonstrate the potential of educational research to transform research in other disciplines through stepping outside traditional disciplinary boundaries - whether that is through boundary objects (Timmis and Williams 2017) or boundary experiences (Clark et al. 2017). This issue also demonstrates how educational research can itself be transformed through adoption, adaptation, and integration of other disciplinary practices and theory (Clark et al. 2017; CohenMiller et al. 2017; Knewstubb and Nicholas 2017; Boeren 2017; Taylor 2017).

Working in interdisciplinary teams

A key consideration in interdisciplinary working is the nature of the research partnerships that are formed and the ways that these evolve in the process of conducting interdisciplinary research. When different disciplines come together in interdisciplinary teams, there are very likely to be inherent biases and values based on those privileged within a researcher's home discipline. Different disciplines may hold different assumptions about what the 'best' method to use is, and this results in privileging the type of knowledge produced by that method (as a brief example, consider the differences between: large-scale assessment data; interviews with individuals; surveys with samples of populations; and ethnographic work; and the differences in how these approaches are viewed by different disciplines and by researchers from different traditions). This is not about content or focus of the research, it is about method of production and the format of the product (or knowledge). In the development and implementation of interdisciplinary research,

there is a real need to acknowledge these different expectations of outcomes with some recognition that they may be valued differently between disciplines. However, it is also important to consider the fact that there is often not a level playing field with the privileging of some methods and outcomes.

As noted by a recent special issue of this journal (Pampaka, Williams and Homer, 2016) and Taylor (2017) in this issue, there is an increasing call for ‘gold standard’ scientific methods in the field of education driven by a ‘what works’ agenda. Despite being a discipline that has developed complex methods appropriate for the complex context of education, we have seen a move towards quasi-experimental and experimental approaches, borrowed from the health sciences. The privileging of randomised control trials and the production of ‘knowable facts’ as the outcomes of research can be seen in the priorities of the UK government’s educational funding through the Department for Education, and in UK AID funding through the Department for International Development. This shift in funding priorities can act as a catalyst for educationalists to engage in interdisciplinary research. However, it can also drive assumptions about what methods of production of knowledge are deemed more valuable, leading to imbalance in the power relations between disciplines involved in particular instances of interdisciplinary research.

As professionals, it can be important to feel that we make a unique contribution, and that bring expertise in a discipline, field, or method to a project (e.g. Rose 2011, Rose and Norwich 2014). Academic careers are based on this premise, and as academics we are encouraged to build a career as a specialist or expert in a specific, bounded field. We are not encouraged to develop as generalists who work across boundaries. In the field of education, this starts early on in research training when doctoral researchers are encouraged to position themselves in relation to

paradigms and create an argument or justification as to why they are aligning themselves with a particular paradigm. Further on in research careers, those who are 'listened to' by government, or have influence, are generally people who have taken a particular approach to a particular topic over the years. This implies that we each hold a hierarchy of method and research strategy, which is fundamental to our own research identities and privileges our own approach over others.

The valuing of alternative types of knowledge from other disciplines could be seen to devalue by comparison the knowledge that is produced in the home discipline. Such hierarchical positioning of knowledge in research partnerships can be challenging or threatening to disciplinary identity. The papers by Timmis and Williams (2017) and Wishart (2017) in this issue narrate some of the challenges associated with the hierarchical nature of different disciplines, particularly when working with the field of sciences, in these cases medical education and veterinary science. A key power differential in the practice of conducting interdisciplinary research highlighted in these papers is that of ethics. Both papers highlight differences in the conceptualisation of research ethics between education and medical/veterinary sciences. Timmis and Williams (2017) discuss the highly regulated procedure for fulfilling ethical requirements from medical education and the struggle to meet these requirements when they are not always applicable to the model of educational research. Wishart (2017) provides an example of the decision-making process to negotiate multi-disciplinary ethical procedures while highlighting the ethical 'non-negotiables' from the scientific perspective. In this regard, it may be useful to think of disciplines as cultures and draw on the literature in the field of international and comparative education where the power of methodologies, epistemologies and ethical

approaches developed in Western institutions and their applicability in other contexts has been widely highlighted (Tikly and Bond 2013; Robinson-Pant and Singal 2013).

The academic system as a whole (including university departments, journals, publishers, and assessment of research output) is created within the context of disciplinary frameworks, so working across disciplines can be problematic in terms of how academics position and present themselves to their colleagues, the wider academic industry, and those outside academia. Legitimising several different types of knowledge from different traditions within education, or from different disciplines, challenges our worth as researchers - particularly in the eyes of others. Timmis and Williams (2017) reflect on this issue in relation to dissemination of findings from interdisciplinary projects. In the context of the UK Higher Education Research Excellence Framework where research is primarily evaluated in disciplinary units, the authors suggest that there is limited incentive to publish interdisciplinarily. Furthermore, journals from different disciplines may have different styles and criteria. Researchers are likely to feel more confident in the journals of their own discipline, writing to an audience familiar with the language and style of that discipline. This can be seen by the fact that the lead author for all the papers in this special issue are from the field of education with most papers exclusively written by educationalists. As with the design and process of interdisciplinary research, dissemination by authors from multiple disciplines to a diverse audience will take significant time and may be a steep learning curve for those involved. This suggests the need for university structures and the academic environment to respond to the increasing call for interdisciplinary research to support researcher agency and innovation throughout the research process rather than stifle it.

Despite the challenges associated with working interdisciplinarily noted thus far, the papers in this special issue also suggest some key processes that can address these and move towards more positive ways of working. Given the different value sets that individuals bring, it becomes especially important that researchers critically reflect on how such assumptions shape individual contributions and their place in the research team. Recent literature about the notion of insider-outsider positioning in educational research has highlighted not only the way that such positioning shifts in different situations and dynamics but also how this is shaped by the perspectives of others, particularly research participants (Thomson and Gunter 2011; McNess, Arthur and Crossley 2015; Milligan 2016). Cohen-Miller et al. (2017) in this issue contribute to this literature by recognising the importance of discussion of positioning and trust in research teams. The fact that the research team in question is both cross-cultural and interdisciplinary brings a new dimension to the discussion of researcher positioning within teams where there could be significant power imbalances.

This also suggests the importance of sustained and critical dialogue between team members so that different value sets can be identified and negotiated. Here, the locus of meaning-making is at the in-between places where disciplinary boundaries meet and are transformed. Timmis and Williams (2017) highlight the ways that both of their individual academic identities have been shaped through developing in-between sites of knowledge in interdisciplinary interaction, occupying the margins of their own disciplines. As with the paper by Clark et al. (2017) they highlight the ways that negotiating across boundaries is hard and depends upon individuals negotiating their own identities and finding a way to meet others in the middle. While it emerges from across the papers that such dialogue requires time, space and commitment, the

potential for such meaning-making to be transformative also indicates some of the associated rewards.

Being an interdisciplinary researcher in education

While we have focused thus far on educationalists taking part in interdisciplinary research projects with individuals from other disciplines, some of the papers in this issue demonstrate the interdisciplinary nature of education itself. In these situations, it is less about finding meaning where disciplinary boundaries meet but bringing in methods, experience and knowledge from other disciplines to develop thinking within the boundaries of education. In this way, they offer a different perspective to the processes of interdisciplinary research as they show how educationalists may be grappling with the dialogues discussed above but within their own research. Boeren (2017) is an example of how an educationalist has approached an issue which is grounded in the context of education but brings together a range of methods and insights from other disciplines to further understanding of that issue. Boeren (2017) develops a model for lifelong learning participation by drawing on perspectives from psychology, sociology and political studies. The paper maps how this approach goes beyond multidisciplinary to fully integrate the approaches in nested layers within the social, learning and policy contexts. Knewstubb and Nicholas (2017) is another example of how different approaches have been taken from other disciplines, in this case linguistics and psychology, to understand educational topics. Here, the method is quite utilitarian with the researchers adopting tools that are most suited to exploring the educational topic of the learning-teaching nexus. Interestingly, the authors reflect on the need for different disciplinary approaches for understanding the individual (learning) and the shared experience (learning and teaching). Both papers highlight

the complex nature of education and the potential for adoption of methods from elsewhere to enable more adaptive and flexible approaches to its study.

Other papers in the issue also suggest that effective research practice involves researchers that are both open to insights from outside and who can project outwards those aspects of their home discipline that can contribute to joint understanding. Taylor (2017) discusses the way that interdisciplinary research can help individuals change the way they think and step back from research objects to take a broader, more encompassing view. Cohen-Miller et al. (2017) reflect on how individuals changed because of their interdisciplinary project and suggest how this may influence their approach to educational research in the future. These papers highlight the ways that interdisciplinary working can, thus, strengthen the discipline of education and the identity of educational researchers.

The value of doing interdisciplinary research

So far this editorial has emphasised the complexities and challenges of working across disciplines. So it is important to address the question, why do it? The answer given in most of the articles in this issue, either implicitly or explicitly, is that an interdisciplinary approach is the best or only way to satisfactorily address "big questions". Education as a context is distinctive for its messiness. For example, the learning of a child in a classroom (not that the articles in this issue have a focus on understanding education in such classroom contexts) will be influenced by the child's individual psychology, the social interactions within the classroom, the pedagogy and actions of the teacher, as well as structures outside of the classroom – social inequalities, curriculum and policy frameworks and so on. All of these factors have an influence in themselves, as well as interacting with one another in sometimes

unpredictable ways. The kinds of problems that educational researchers engage with – as in examples above – are often exactly these kinds of big, complex, problems that draw together concepts from several fields. Stepping outside our own disciplinary comfort zone can be conceptually and emotionally challenging - but such problems and questions are arguably best understood by bringing together knowledge and method from a range of disciplines.

The phrase "big questions", perhaps conflates two kinds of objective that we find in the articles in this special issue. In Wishart (2017), we see a clear example of a research team where individual researchers are seeking new perspectives on existing questions through interdisciplinary work; in this case to understand ways in which the creation of animations can contribute to students' understanding of biological processes. Taylor (2017) on the other hand represents a commitment to move beyond traditional methodological approaches to begin to address new kinds of questions; specifically those that involve non-humans. Taylor goes on to suggest that object oriented ontology (moving beyond the primacy of humans, and casting everything as an object) can help us think about higher education in broader terms than dictated by the confines of traditional disciplinary borders. Such reconsideration of higher education leads to messy and difficult thinking but creates opportunities for different form of progress. Between these two articles (Wishart 2017; Taylor 2017), we see a spectrum of approaches that use interdisciplinary work either to expand a potential set of answers or to expand a possible set of questions. Within this spectrum there is evidence that the development of such interdisciplinary research practice has potentially profound implications for educational research, particularly with regard to its scope and focus.

The limits of interdisciplinarity

A little over ten years ago, Bridges (2006) wrote that:

The last twenty-five years have seen a huge and bewildering enlargement in the intellectual resources from which educational researchers have drawn. They have also seen a preoccupation with the diversification of method perhaps over the development of method in ways that strengthen its capacity to contribute to the epistemological project that it serves (Bridges 2006, 270).

Perhaps the articles in this issue show that educational research is still in the process of the transition that Bridges argues for, from diversification to development of method. There is clearly ongoing work focused on drawing methods from different disciplines together (Clark et al. 2017; Wishart 2017; Timmis and Williams 2017) as well as work that aims to develop new methods for working at boundaries (Boeren 2017; Taylor 2017).

There is some thinking to be done here about the limits of interdisciplinarity. Wishart (2017) refers to Jacobs (2014), in her questioning of the extent to which new theory, methods and practices can be developed before an interdisciplinary research field becomes a new discipline. This links with a discussion in Jay (2013) regarding the paradox of interdisciplinarity. Essentially, the development of interdisciplinary work requires the dismantling of some of the boundaries of assumption, convention, and so on that define a discipline. In this way, interdisciplinarity both requires disciplines and requires that we relax the criteria that define them. Along the same lines, Bridges (2006) questions whether the idea of interdisciplinarity really represents an opportunity for novel research, or whether it is merely an institutional ratification of disciplines. These kinds of concerns have led some researchers to think that concepts of trans- or post-disciplinarity could be more useful ways to think about research. Such definitional questions are not resolvable here but serve to highlight the

need to continue to question how best to research that does not comfortably sit within traditional disciplinary boundaries.

One factor that is common across all of the articles in this issue is the need for dialogue between disciplinary approaches. This is clearest in those articles that report authors' reflection on collaborative interdisciplinary research. However, dialogue is also evident in those articles that set out an individual researcher's development of an interdisciplinary approach. Knewstubb and Nicholas (2017), for example, develop thinking about the learning-teaching nexus in higher education. Traditionally, students' learning and academics' teaching are researched as separate entities. Knewstubb and Nicholas argue that while we do need to research each part separately, we cannot gain a full understanding of learning and teaching simply by summing these separate parts. The coming together of individual learning and teaching experiences in a shared "communicative learning-teaching relationship" (page XXX) would seem an apt metaphor for the coming together of distinct research perspectives on learning and on teaching.

The different forms and representations of dialogue invoked by authors in this special issue recall work that has used Bakhtin's dialogic theory to explore interdisciplinary research approaches (Nikitina 2005; Nowacek 2005). Researchers following Bakhtin would treat dialogue as the primary unit of analysis. Dialogue (between researchers, and between disciplines and perspectives) is emphasised throughout this special issue, and this focus on dialogue is perhaps the best metaphor to describe how interdisciplinary approaches have developed, and will continue to develop, in the field of education and elsewhere. We hope that this special issue encourages further dialogue among researchers attempting to extend and enrich the field of education through interdisciplinarity.

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